

Karl Marx

# Capital Volume One

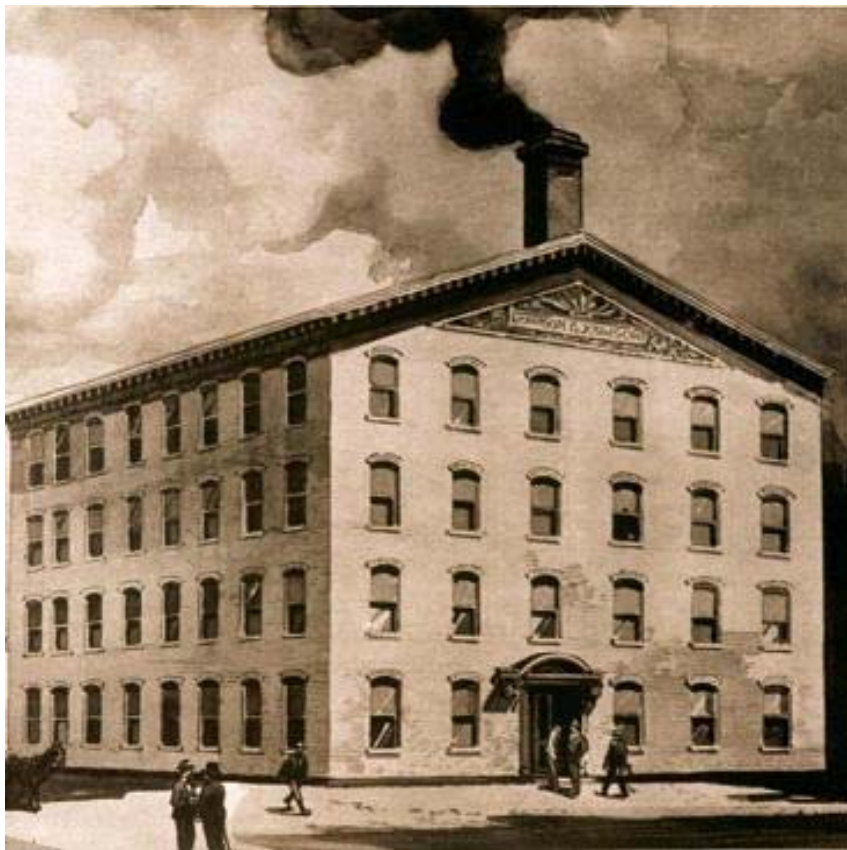
1867

Part III: The Production of Absolute Surplus-Value

Chapter Ten

## The Working-Day

*Pages 1-24*



**Part III: The Production of Absolute Surplus-Value**

**CHAPTER TEN**

# **The Working-Day**

**Pages 1-24**

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**SECTION 1**

**THE LIMITS OF THE WORKING-DAY**

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We started with the supposition that labour-power is bought and sold at its value. Its value, like that of all other commodities, is determined by the working-time necessary to its production. If the production of the average daily means of subsistence of the labourer takes up 6 hours, he must work, on the average, 6 hours

every day, to produce his daily labour-power, or to reproduce the value received as the result of its sale. The necessary part of his working-day amounts to 6 hours, and is, therefore, *caeteris paribus*, a given quantity. But with this, the extent of the working-day itself is not yet given.

Let us assume that the line A—B represents the length of the necessary working-time, say 6 hours. If the labour be prolonged 1, 3, or 6 hours beyond A—B, we have 3 other lines:

Working-day I. Working-day II. Working-day III.

A——B-C. A——B—C. A——B——C.

representing 3 different working-days of 7, 9, and 12 hours. The extension B—C of the line A—B represents the length of the surplus-labour. As the working-day is A—B + B—C or A—C, it varies with the variable quantity B—C. Since A—B is constant, the ratio of B—C to A—B can always be calculated. In working-day I, it is 1/6, in working-day II, 3/6, in working day III 6/6 of A—B. Since further the ratio surplus working-time,

—————  
necessary working-time,

determines the rate of the surplus-value, the latter is given by the ratio of B—C to A—B. It amounts in the 3 different working-days respectively to 16 2/3, 50 and 100 per cent. On the other hand, the rate of surplus-value alone would not give us the extent of the working-day. If this rate, *e.g.*, were 100 per cent., the working-day might be of 8, 10, 12, or more hours. It would indicate that the 2 constituent parts of the working-day, necessary-labour and surplus-labour time, were equal in extent, but not how long each of these two constituent parts was.

The working-day is thus not a constant, but a variable quantity. One of its parts, certainly, is determined by the working-time required for the reproduction of the labour-power of the labourer himself. But its total amount varies with the duration of the surplus-labour. The working-day is, therefore, determinable, but is, *per se*, indeterminate. [1]

Although the working-day is not a fixed, but a fluent quantity, it can, on the other hand, only vary within certain limits. The minimum limit is, however, not determinable; of course, if we make the extension line B—C or the surplus-labour = 0, we have a minimum limit, *i.e.*, the part of the day which the labourer must necessarily work for his own maintenance. On the basis of capitalist production, however, this necessary labour can form a part only of the working-day; the working-day itself can never be reduced to this minimum. On the other hand, the working-day has a maximum limit. It cannot be prolonged beyond a certain point.

This maximum limit is conditioned by two things. First, by the physical bounds of labour-power. Within the 24 hours of the natural day a man can expend only a definite quantity of his vital force. A horse, in like manner, can only work from day to day, 8 hours. During part of the day this force must rest, sleep; during another part the man has to satisfy other physical needs, to feed, wash, and clothe himself. Besides these purely physical limitations, the extension of the working-day encounters moral ones. The labourer needs time for satisfying his intellectual and social wants, the extent and number of which are conditioned by the general state of social advancement. The variation of the working-day fluctuates, therefore, within physical and social bounds. But both these limiting conditions are of a very elastic nature, and allow the greatest latitude. So we find working-days of 8, 10, 12, 14, 16, 18 hours, i.e., of the most different lengths.

The capitalist has bought the labour-power at its day-rate. To him its use-value belongs during one working-day. He has thus acquired the right to make the labourer work for him during one day. But, what is a working-day? [2]

At all events, less than a natural day. By how much? The capitalist has his own views of this *ultima Thule*, the necessary limit of the working-day. As capitalist, he is only capital personified. His soul is the soul of capital. But capital has one single life impulse, the tendency to create value and surplus-value, to make its constant factor, the means of production, absorb the greatest possible amount of surplus-labour. [3]

Capital is dead labour, that, vampire-like, only lives by sucking living labour, and lives the more, the more labour it sucks. The time during which the labourer works, is the time during which the capitalist consumes the labour-power he has purchased of him. [4]

If the labourer consumes his disposable time for himself, he robs the capitalist. [5]

The capitalist then takes his stand on the law of the exchange of commodities. He, like all other buyers, seeks to get the greatest possible benefit out of the use-value of his commodity. Suddenly the voice of the labourer, which had been stifled in the storm and stress of the process of production, rises:

The commodity that I have sold to you differs from the crowd of other commodities, in that its use creates value, and a value greater than its own. That is why you bought it. That which on your side appears a spontaneous expansion of capital, is on mine extra expenditure of labour-power. You and I know on the market only one law, that of the exchange of commodities. And the consumption of the commodity belongs not to the seller who parts with it, but to the buyer, who

acquires it. To you, therefore, belongs the use of my daily labour-power. But by means of the price that you pay for it each day, I must be able to reproduce it daily, and to sell it again. Apart from natural exhaustion through age, &c., I must be able on the morrow to work with the same normal amount of force, health and freshness as to-day. You preach to me constantly the gospel of "saving" and "abstinence." Good! I will, like a sensible saving owner, husband my sole wealth, labour-power, and abstain from all foolish waste of it. I will each day spend, set in motion, put into action only as much of it as is compatible with its normal duration, and healthy development. By an unlimited extension of the working-day, you may in one day use up a quantity of labour-power greater than I can restore in three. What you gain in labour I lose in substance. The use of my labour-power and the spoliation of it are quite different things. If the average time that (doing a reasonable amount of work) an average labourer can live, is 30 years, the value of my labour-power, which you pay me from day to day is  $1 / 365 \times 30$  or  $1 / 10950$  of its total value. But if you consume it in 10 years, you pay me daily  $1 / 10950$  instead of  $1 / 3650$  of its total value, *i.e.*, only  $1/3$  of its daily value, and you rob me, therefore, every day of  $2/3$  of the value of my commodity. You pay me for one day's labour-power, whilst you use that of 3 days. That is against our contract and the law of exchanges. I demand, therefore, a working-day of normal length, and I demand it without any appeal to your heart, for in money matters sentiment is out of place. You may be a model citizen, perhaps a member of the Society for the Prevention of Cruelty to Animals, and in the odour of sanctity to boot; but the thing that you represent face to face with me has no heart in its breast. That which seems to throb there is my own heart-beating. I demand the normal working-day because I, like every other seller, demand the value of my commodity. [6]

We see then, that, apart from extremely elastic bounds, the nature of the exchange of commodities itself imposes no limit to the working-day, no limit to surplus-labour. The capitalist maintains his rights as a purchaser when he tries to make the working-day as long as possible, and to make, whenever possible, two working-days out of one. On the other hand, the peculiar nature of the commodity sold implies a limit to its consumption by the purchaser, and the labourer maintains his right as seller when he wishes to reduce the working-day to one of definite normal duration. There is here, therefore, an antinomy, right against right, both equally bearing the seal of the law of exchanges. Between equal rights force decides. Hence is it that in the history of capitalist production, the determination of what is a working-day, presents itself as the result of a struggle, a struggle between collective capital, *i.e.*, the class of capitalists, and collective labour, *i.e.*, the working-class.

## SECTION 2

### THE GREED FOR SURPLUS-LABOUR. MANUFACTURER AND BOYARD

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Capital has not invented surplus-labour. Wherever a part of society possesses the monopoly of the means of production, the labourer, free or not free, must add to the working-time necessary for his own maintenance an extra working-time in order to produce the means of subsistence for the owners of the means of production, [7] whether this proprietor be the Athenian *well-to-do man*, Etruscan theocrat, *civis Romanus*, Norman baron, American slave-owner, Wallachian Boyard, modern landlord or capitalist. [8] It is, however, clear that in any given economic formation of society, where not the exchange-value but the use-value of the product predominates, surplus-labour will be limited by a given set of wants which may be greater or less, and that here no boundless thirst for surplus-labour arises from the nature of the production itself. Hence in antiquity over-work becomes horrible only when the object is to obtain exchange-value in its specific independent money-form; in the production of gold and silver. Compulsory working to death is here the recognised form of over-work. Only read Diodorus Siculus. [9] Still these are exceptions in antiquity. But as soon as people, whose production still moves within the lower forms of slave-labour, *corvée*-labour, &c., are drawn into the whirlpool of an international market dominated by the capitalistic mode of production, the sale of their products for export becoming their principal interest, the civilised horrors of over-work are grafted on the barbaric horrors of slavery, serfdom, &c. Hence the negro labour in the Southern States of the American Union preserved something of a patriarchal character, so long as production was chiefly directed to immediate local consumption. But in proportion, as the export of cotton became of vital interest to these states, the over-working of the negro and sometimes the using up of his life in 7 years of labour became a factor in a calculated and calculating system. It was no longer a question of obtaining from him a certain quantity of useful products. It was now a question of production of surplus-labour itself: So was it also with the *corvée*, e.g., in the Danubian Principalities (now Roumania).

The comparison of the greed for surplus-labour in the Danubian Principalities with the same greed in English factories has a special interest, because surplus-labour in the *corvée* has an independent and palpable form.

Suppose the working-day consists of 6 hours of necessary labour, and 6 hours of surplus-labour. Then the free labourer gives the capitalist every week 6 x 6 or 36 hours of surplus-labour. It is the same as if he worked 3 days in the week for himself, and 3 days in the week gratis for the capitalist. But this is not evident on

the surface. Surplus-labour and necessary labour glide one into the other. I can, therefore, express the same relationship by saying, e.g., that the labourer in every minute works 30 seconds for himself, and 30 for the capitalist, etc. It is otherwise with the *corvée*. The necessary labour which the Wallachian peasant does for his own maintenance is distinctly marked off from his surplus-labour on behalf of the Boyard. The one he does on his own field, the other on the seignorial estate. Both parts of the labour-time exist, therefore, independently, side by side one with the other. In the *corvée* the surplus-labour is accurately marked off from the necessary labour. This, however, can make no difference with regard to the quantitative relation of surplus-labour to necessary labour. Three days' surplus-labour in the week remain three days that yield no equivalent to the labourer himself, whether it be called *corvée* or wage-labour. But in the capitalist the greed for surplus-labour appears in the straining after an unlimited extension of the working-day, in the Boyard more simply in a direct hunting after days of *corvée*. [10]

In the Danubian Principalities the *corvée* was mixed up with rents in kind and other appurtenances of bondage, but it formed the most important tribute paid to the ruling class. Where this was the case, the *corvée* rarely arose from serfdom; serfdom much more frequently on the other hand took origin from the *corvée*. [11] This is what took place in the Roumanian provinces. Their original mode of production was based on community of the soil, but not in the Slavonic or Indian form. Part of the land was cultivated severally as freehold by the members of the community, another part — *ager publicus* — was cultivated by them in common. The products of this common labour served partly as a reserve fund against bad harvests and other accidents, partly as a public store for providing the costs of war, religion, and other common expenses. In course of time military and clerical dignitaries usurped, along with the common land, the labour spent upon it. The labour of the free peasants on their common land was transformed into *corvée* for the thieves of the common land. This *corvée* soon developed into a servile relationship existing in point of fact, not in point of law, until Russia, the liberator of the world, made it legal under presence of abolishing serfdom. The code of the *corvée*, which the Russian General Kisseleff proclaimed in 1831, was of course dictated by the Boyards themselves. Thus Russia conquered with one blow the magnates of the Danubian provinces, and the applause of liberal cretins throughout Europe.

According to the "Règlement organique," as this code of the *corvée* is called, every Wallachian peasant owes to the so-called landlord, besides a mass of detailed payments in kind: (1), 12 days of general labour; (2), one day of field labour; (3), one day of wood carrying. In all, 14 days in the year. With deep insight into Political Economy, however, the working-day is not taken in its ordinary sense, but as the working-day necessary to the production of an average daily product; and that

average daily product is determined in so crafty a way that no Cyclops would be done with it in 24 hours. In dry words, the Règlement itself declares with true Russian irony that by 12 working-days one must understand the product of the manual labour of 36 days, by 1 day of field labour 3 days, and by 1 day of wood carrying in like manner three times as much. In all, 42 corvée days. To this had to be added the so-called jobagie, service due to the lord for extraordinary occasions. In proportion to the size of its population, every village has to furnish annually a definite contingent to the jobagie. This additional corvée is estimated at 14 days for each Wallachian peasant. Thus the prescribed corvée amounts to 56 working-days yearly. But the agricultural year in Wallachia numbers in consequence of the severe climate only 210 days, of which 40 for Sundays and holidays, 30 on an average for bad weather, together 70 days, do not count. 140 working-days remain. The ratio of the corvée to the necessary labour  $56/84$  or  $66\frac{2}{3}\%$  gives a much smaller rate of surplus-value than that which regulates the labour of the English agricultural or factory labourer. This is, however, only the legally prescribed corvée. And in a spirit yet more "liberal" than the English Factory Acts, the "Règlement organique" has known how to facilitate its own evasion. After it has made 56 days out of 12, the nominal day's work of each of the 56 corvée days is again so arranged that a portion of it must fall on the ensuing day. In one day, e.g., must be weeded an extent of land, which, for this work, especially in maize plantations, needs twice as much time. The legal day's work for some kinds of agricultural labour is interpretable in such a way that the day begins in May and ends in October. In Moldavia conditions are still harder. "The 12 corvée days of the 'Règlement organique' cried a Boyard drunk with victory, amount to 365 days in the year." [12]

If the Règlement organique of the Danubian provinces was a positive expression of the greed for surplus-labour which every paragraph legalised, the English Factory Acts are the negative expression of the same greed. These acts curb the passion of capital for a limitless draining of labour-power, by forcibly limiting the working-day by state regulations, made by a state that is ruled by capitalist-and landlord. Apart from the working-class movement that daily grew more threatening, the limiting of factory labour was dictated by the same necessity which spread guano over the English fields. The same blind eagerness for plunder that in the one case exhausted the soil, had, in the other, torn up by the roots the living force of the nation. Periodical epidemics speak on this point as clearly as the diminishing military standard in Germany and France. [13]

The Factory Act of 1850 now in force (1867) allows for the average working-day 10 hours, i.e., for the first 5 days 12 hours from 6 a.m. to 6 p.m., including  $\frac{1}{2}$  an hour for breakfast, and an hour for dinner, and thus leaving  $10\frac{1}{2}$  working-hours, and 8 hours for Saturday, from 6 a.m. to 2 p.m., of which  $\frac{1}{2}$  an hour is subtracted for



breakfast. 60 working-hours are left, 10 1/2 for each of the first 5 days, 7 1/2 for the last. [14]

Certain guardians of these laws are appointed, Factory Inspectors, directly under the Home Secretary, whose reports are published half-yearly, by order of Parliament. They give regular and official statistics of the capitalistic greed for surplus-labour.

Let us listen, for a moment, to the Factory Inspectors. [15] "The fraudulent mill-owner begins work a quarter of an hour (sometimes more, sometimes less) before 6 a.m., and leaves off a quarter of an hour (sometimes more, sometimes less) after 6 p.m. He takes 5 minutes from the beginning and from the end of the half hour nominally allowed for breakfast, and 10 minutes at the beginning and end of the hour nominally allowed for dinner. He works for a quarter of an hour (sometimes more, sometimes less) after 2 p.m. on Saturday. Thus his gain is —

Before 6 a.m., ..... 15 minutes.

After 6 p.m., ..... 15 "

At breakfast time, ..... 10 "

At dinner time, ..... 20 "

—————

Five days — 300 minutes, 60 "

On Saturday before 6 a.m., ..... 15 minutes.

At breakfast time, ..... 10 "

After 2 p.m., ..... 15 "

—————

40 minutes.

Total weekly, ..... 340 minutes.

Or 5 hours and 40 minutes weekly, which multiplied by 50 working weeks in the year (allowing two for holidays and occasional stoppages) is equal to 27 working-days." [16]

"Five minutes a day's increased work, multiplied by weeks, are equal to two and a half days of produce in the year." [17]

"An additional hour a day gained by small instalments before 6 a.m., after 6 p.m., and at the beginning and end of the times nominally fixed for meals, is nearly equivalent to working 13 months in the year." [18]

Crises during which production is interrupted and the factories work "short time," i.e., for only a part of the week, naturally do not affect the tendency to extend the working-day. The less business there is, the more profit has to be made on the business done. The less time spent in work, the more of that time has to be turned into surplus labour-time.

Thus the Factory Inspector's report on the period of the crisis from 1857 to 1858:

"It may seem inconsistent that there should be any overworking at a time when trade is so bad; but that very badness leads to the transgression by unscrupulous men, they get the extra profit of it. ... In the last half year, says Leonard Homer, 122 mills in my district have been given up; 143 were found standing," yet, over-work is continued beyond the legal hours. [19]

"For a great part of the time," says Mr. Howell, "owing to the depression of trade, many factories were altogether closed, and a still greater number were working short time. I continue, however, to receive about the usual number of complaints that half, or three-quarters of an hour in the day, are snatched from the workers by encroaching upon the times professedly allowed for rest and refreshment." [20] The same phenomenon was reproduced on a smaller scale during the frightful cotton-crises from 1861 to 1865. [21] "It is sometimes advanced by way of excuse, when persons are found at work in a factory, either at a meal hour, or at some illegal time, that they will not leave the mill at the appointed hour, and that compulsion is necessary to force them to cease work [cleaning their machinery, &c.], especially on Saturday afternoons. But, if the hands remain in a factory after the machinery has ceased to revolve ... they would not have been so employed if sufficient time had been set apart specially for cleaning, &c., either before 6 a.m. [*sic.!*] or before 2 p.m. on Saturday afternoons." [22]

"The profit to be gained by it (over-working in violation of the Act) appears to be, to many, a greater temptation than they can resist; they calculate upon the chance of not being found out; and when they see the small amount of penalty and costs, which those who have been convicted have had to pay, they find that if they should be detected there will still be a considerable balance of gain.... [23] In cases where the additional time is gained by a multiplication of small thefts in the course of the day, there are insuperable difficulties to the inspectors making out a case." [24]

These "small thefts" of capital from the labourer's meal and recreation time, the factory inspectors also designate as "petty pilferings of minutes," [25] "snatching a few minutes," [26] or, as the labourers technically called them, "nibbling and cribbling at meal-times." [27]

It is evident that in this atmosphere the formation of surplus-value by surplus-labour, is no secret. "If you allow me," said a highly respectable master to me, "to work only ten minutes in the day over-time, you put one thousand a year in my pocket." [28] "Moments are the elements of profit." [29]

Nothing is from this point of view more characteristic than the designation of the workers who work full time as "full-timers," and the children under 13 who are only allowed to work 6 hours as "half-timers." The worker is here nothing more than personified labour-time. All individual distinctions are merged in those of "full-timers" and "half-timers " [30]

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### SECTION 3

#### BRANCHES OF ENGLISH INDUSTRY WITHOUT LEGAL LIMITS TO EXPLOITATION

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We have hitherto considered the tendency to the extension of the working-day, the were-wolf's hunger for surplus-labour in a department where the monstrous exactions, not surpassed, says an English bourgeois economist, by the cruelties of the Spaniards to the American red-skins, [31] caused capital at last to be bound by the chains of legal regulations. Now, let us cast a glance at certain branches of production in which the exploitation of labour is either free from fetters to this day, or was so yesterday.

Mr. Broughton Charlton, county magistrate, declared, as chairman of a meeting held at the Assembly Rooms, Nottingham, on the 14th January, 1860, "that there was an amount of privation and suffering among that portion of the population connected with the lace trade, unknown in other parts of the kingdom, indeed, in the civilised world .... Children of nine or ten years are dragged from their squalid beds at two, three, or four o'clock in the morning and compelled to work for a bare subsistence until ten, eleven, or twelve at night, their limbs wearing away, their frames dwindling, their faces whitening, and their humanity absolutely sinking into a stone-like torpor, utterly horrible to contemplate.... We are not surprised that Mr. Mallett, or any other manufacturer, should stand forward and protest against discussion.... The system, as the Rev. Montagu Valpy describes it, is one of unmitigated slavery, socially, physically, morally, and spiritually.... What can be thought of a town which holds a public meeting to petition that the period of labour for men shall be diminished to eighteen hours a day? .... We declaim against the Virginian and Carolinian cotton-planters. Is their black-market, their lash, and their barter of human flesh more detestable than this slow sacrifice of humanity which

takes place in order that veils and collars may be fabricated for the benefit of capitalists?" [32]

The potteries of Staffordshire have, during the last 22 years, been the subject of three parliamentary inquiries. The result is embodied in Mr. Scriven's Report of 1841 to the "Children's Employment Commissioners," in the report of Dr. Greenhow of 1860 published by order of the medical officer of the Privy Council (Public Health, 3rd Report, 112-113), lastly, in the report of Mr. Longe of 1862 in the "First Report of the Children's Employment Commission, of the 13th June, 1863." For my purpose it is enough to take, from the reports of 1860 and 1863, some depositions of the exploited children themselves. From the children we may form an opinion as to the adults, especially the girls and women, and that in a branch of industry by the side of which cotton-spinning appears an agreeable and healthful occupation. [33]

William Wood, 9 years old, was 7 years and 10 months when he began to work. He "ran moulds" (carried ready-moulded articles into the drying-room, afterwards bringing back the empty mould) from the beginning. He came to work every day in the week at 6 a.m., and left off about 9 p.m. "I work till 9 o'clock at night six days in the week. I have done so seven or eight weeks." Fifteen hours of labour for a child 9 years old! J. Murray, 12 years of age, says: "I turn jigger, and run moulds. I come at 6. Sometimes I come at 4. I worked all night last night, till 6 o'clock this morning. I have not been in bed since the night before last. There were eight or nine other boys working last night. All but one have come this morning. I get 3 shillings and sixpence. I do not get any more for working at night. I worked two nights last week." Fernyhough, a boy of ten: "I have not always an hour (for dinner). I have only half an hour sometimes; on Thursday, Friday, and Saturday. [34]

Dr. Greenhow states that the average duration of life in the pottery districts of Stoke-on-Trent, and Wolstanton is extraordinarily short. Although in the district of Stoke, only 36.6% and in Wolstanton only 30.4% of the adult male population above 20 are employed in the potteries, among the men of that age in the first district more than half, in the second, nearly 2/5 of the whole deaths are the result of pulmonary diseases among the potters. Dr. Boothroyd, a medical practitioner at Hanley, says: "Each successive generation of potters is more dwarfed and less robust than the preceding one." In like manner another doctor, Mr. M'Bean: "Since he began to practice among the potters 25 years ago, he had observed a marked degeneration especially shown in diminution of stature and breadth." These statements are taken from the report of Dr. Greenhow in 1860. [35]

From the report of the Commissioners in 1863, the following: Dr. J. T. Arledge, senior physician of the North Staffordshire Infirmary, says: "The potters as a class, both men and women, represent a degenerated population, both physically and

morally. They are, as a rule, stunted in growth, ill-shaped, and frequently ill-formed in the chest; they become prematurely old, and are certainly short-lived; they are phlegmatic and bloodless, and exhibit their debility of constitution by obstinate attacks of dyspepsia, and disorders of the liver and kidneys, and by rheumatism. But of all diseases they are especially prone to chest-disease, to pneumonia, phthisis, bronchitis, and asthma. One form would appear peculiar to them, and is known as potter's asthma, or potter's consumption. Scrofula attacking the glands, or bones, or other parts of the body, is a disease of two-thirds or more of the potters .... That the 'degenerescence' of the population of this district is not even greater than it is, is due to the constant recruiting from the adjacent country, and intermarriages with more healthy races." [36]

Mr. Charles Parsons, late house surgeon of the same institution, writes in a letter to Commissioner Longe, amongst other things: "I can only speak from personal observation and not from statistical data, but I do not hesitate to assert that my indignation has been aroused again and again at the sight of poor children whose health has been sacrificed to gratify the avarice of either parents or employers." He enumerates the causes of the diseases of the potters, and sums them up in the phrase, "long hours." The report of the Commission trusts that "a manufacture which has assumed so prominent a place in the whole world, will not long be subject to the remark that its great success is accompanied with the physical deterioration, widespread bodily suffering, and early death of the workpeople ... by whose labour and skill such great results have been achieved." [37] And all that holds of the potteries in England is true of those in Scotland. [38]

The manufacture of lucifer matches dates from 1833, from the discovery of the method of applying phosphorus to the match itself. Since 1845 this manufacture has rapidly developed in England, and has extended especially amongst the thickly populated parts of London as well as in Manchester, Birmingham, Liverpool, Bristol, Norwich, Newcastle and Glasgow. With it has spread the form of lockjaw, which a Vienna physician in 1845 discovered to be a disease peculiar to lucifer-matchmakers. Half the workers are children under thirteen, and young persons under eighteen. The manufacture is on account of its unhealthiness and unpleasantness in such bad odour that only the most miserable part of the labouring class, half-starved widows and so forth, deliver up their children to it, "the ragged, half-starved, untaught children." [39]

Of the witnesses that Commissioner White examined (1863), 270 were under 18, 50 under 10, 10 only 8, and 5 only 6 years old. A range of the working-day from 12 to 14 or 15 hours, night-labour, irregular meal-times, meals for the most part taken in the very workrooms that are pestilent with phosphorus. Dante would have found the worst horrors of his Inferno surpassed in this manufacture.

In the manufacture of paper-hangings the coarser sorts are printed by machine; the finer by hand (block-printing). The most active business months are from the beginning of October to the end of April. During this time the work goes on fast and furious without intermission from 6 a.m. to 10 p.m. or further into the night.

J. Leach deposes: "Last winter six out of nineteen girls were away from ill-health at one time from over-work. I have to bawl at them to keep them awake." W. Duffy: "I have seen when the children could none of them keep their eyes open for the work; indeed, none of us could." J. Lightbourne: "Am 13 We worked last winter till 9 (evening), and the winter before till 10. I used to cry with sore feet every night last winter." G. Apsden: "That boy of mine when he was 7 years old I used to carry him on my back to and fro through the snow, and he used to have 16 hours a day ... I have often knelt down to feed him as he stood by the machine, for he could not leave it or stop." Smith, the managing partner of a Manchester factory: "We (he means his "hands" who work for "us") work on with no stoppage for meals, so that day's work of 10 1/2 hours is finished by 4.30 p.m., and all after that is over-time." [40] (Does this Mr. Smith take no meals himself during 10 1/2 hours?) "We (this same Smith) seldom leave off working before 6 p.m. (he means leave off the consumption of "our" labour-power machines), so that we (iterum Crispinus) are really working over-time the whole year round For all these, children and adults alike (152 children and young persons and 140 adults), the average work for the last 18 months has been at the very least 7 days, 5 hours, or 78 1/2 hours a week. For the six weeks ending May 2nd this year (1862), the average was higher — 8 days or 84 hours a week." Still this same Mr. Smith, who is so extremely devoted to the *pluralis majestatis*, adds with a smile, "Machine-work is not great." So the employers in the block-printing say: "Hand labour is more healthy than machine work." On the whole, manufacturers declare with indignation against the proposal "to stop the machines at least during meal-times." A clause, says Mr. Otley, manager of a wall-paper factory in the Borough, "which allowed work between, say 6 a.m. and 9 p. in would suit us (!) very well, but the factory hours, 6 a.m. to 6 p.m., are not suitable. Our machine is always stopped for dinner. (What generosity!) There is no waste of paper and colour to speak of. But," he adds sympathetically, "I can understand the loss of time not being liked." The report of the Commission opines with naïvete that the fear of some "leading firms" of losing time, *i.e.*, the time for appropriating the labour of others, and thence losing profit is not a sufficient reason for allowing children under 13, and young persons under 18, working 12 to 16 hours per day, to lose their dinner, nor for giving it to them as coal and water are supplied to the steam-engine, soap to wool, oil to the wheel — as merely auxiliary material to the instruments of labour, during the process of production itself. [41]

No branch of industry in England (we do not take into account the making of bread by machinery recently introduced) has preserved up to the present day a method of production so archaic, so — as we see from the poets of the Roman Empire — pre-Christian, as baking. But capital, as was said earlier, is at first indifferent as to the technical character of the labour-process; it begins by taking it just as it finds it.

The incredible adulteration of bread, especially in London, was first revealed by the House of Commons Committee "on the adulteration of articles of food" (1855-56), and Dr. Hassall's work, "Adulterations detected." [42] The consequence of these revelations was the Act of August 6th, 1860, "for preventing the adulteration of articles of food and drink," an inoperative law, as it naturally shows the tenderest consideration for every Free-trader who determines by the buying or selling of adulterated commodities "to turn an honest penny." [43] The Committee itself formulated more or less naïvely its conviction that Free-trade meant essentially trade with adulterated, or as the English ingeniously put it, "sophisticated" goods. In fact this kind of sophistry knows better than Protagoras how to make white black, and black white, and better than the Eleatics how to demonstrate *ad oculos* that everything is only appearance. [44]

At all events the Committee had directed the attention of the public to its "daily bread," and therefore to the baking trade. At the same time in public meetings and in petitions to Parliament rose the cry of the London journeymen bakers against their over-work, &c. The cry was so urgent that Mr. H. S. Tremenhare, also a member of the Commission of 1863 several times mentioned, was appointed Royal Commissioner of Inquiry. His report. [45] together with the evidence given, roused capitalist, or landlord, or sinecurist, is commanded to eat his bread in the sweat of his brow, but they did not know that he had to eat daily in his bread a certain quantity of human perspiration mixed with the discharge of abscesses, cobwebs, dead black-beetles, and putrid German yeast, without counting alum, sand, and other agreeable mineral ingredients. Without any regard to his holiness, Free-trade, the free baking-trade was therefore placed under the supervision of the State inspectors (Close of the Parliamentary session of 1863), and by the same Act of Parliament, work from 9 in the evening to 5 in the morning was forbidden for journeymen bakers under 18. The last clause speaks volumes as to the over-work in this old-fashioned, homely line of business.

"The work of a London journeyman baker begins, as a rule, at about eleven at night. At that hour he 'makes the dough,' — a laborious process, which lasts from half an hour to three quarters of an hour, according to the size of the batch or the labour bestowed upon it. He then lies down upon the kneading-board, which is also the covering of the trough in which the dough is 'made'; and with a sack under him, and another rolled up as a pillow, he sleeps for about a couple of hours. He is then

engaged in a rapid and continuous labour for about five hours — throwing out the dough, 'scaling it off,' moulding it, putting it into the oven, preparing and baking rolls and fancy bread, taking the batch bread out of the oven, and up into the shop, &c., &c. The temperature of a bakehouse ranges from about 75 to upwards of 90 degrees, and in the smaller bakehouses approximates usually to the higher rather than to the lower degree of heat. When the business of making the bread, rolls, &c., is over, that of its distribution begins, and a considerable proportion of the journeymen in the trade, after working hard in the manner described during the night, are upon their legs for many hours during the day, carrying baskets, or wheeling hand-carts, and sometimes again in the bakehouse, leaving off work at various hours between 1 and 6 p.m. according to the season of the year, or the amount and nature of their master's business; while others are again engaged in the bakehouse in 'bringing out' more batches until late in the afternoon. [46] ... During what is called 'the London season,' the operatives belonging to the 'full-priced' bakers at the West End of the town, generally begin work at 11 p.m., and are engaged in making the bread, with one or two short (sometimes very short) intervals of rest, up to 8 o'clock the next morning. They are then engaged all day long, up to 4, 5, 6, and as late as 7 o'clock in the evening carrying out bread, or sometimes in the afternoon in the bakehouse again, assisting in the biscuit-baking. They may have, after they have done their work, sometimes five or six, sometimes only four or five hours' sleep before they begin again. On Fridays they always begin sooner, some about ten o'clock, and continue in some cases, at work, either in making or delivering the bread up to 8 p.m. on Saturday night, but more generally up to 4 or 5 o'clock, Sunday morning. On Sundays the men must attend twice or three times during the day for an hour or two to make preparations for the next day's bread.... The men employed by the underselling masters (who sell their bread under the 'full price,' and who, as already pointed out, comprise three-fourths of the London bakers) have not only to work on the average longer hours, but their work is almost entirely confined to the bakehouse. The underselling masters generally sell their bread... in the shop. If they send it out, which is not common, except as supplying chandlers' shops, they usually employ other hands for that purpose. It is not their practice to deliver bread from house to house. Towards the end of the week ... the men begin on Thursday night at 10 o'clock, and continue on with only slight intermission until late on Saturday evening." [47]

Even the bourgeois intellect understands the position of the "underselling" masters. "The unpaid labour of the men was made the source whereby the competition was carried on." [48] And the "full-priced" baker denounces his underselling competitors to the Commission of Inquiry as thieves of foreign labour and adulterators. "They only exist now by first defrauding the public, and next getting 18 hours' work out of their men for 12 hours' wages." [49]



The adulteration of bread and the formation of a class of bakers that sells the bread below the full price, date from the beginning of the 18th century, from the time when the corporate character of the trade was lost, and the capitalist in the form of the miller or flour-factor, rises behind the nominal master baker [50] Thus was laid the foundation of capitalistic production in this trade, of the unlimited extension of the working-day and of night-labour, although the latter only since 1824 gained a serious footing, even in London. [51]

After what has just been said, it will be understood that the Report of the Commission classes journeymen bakers among the short-lived labourers, who, having by good luck escaped the normal decimation of the children of the working-class, rarely reach the age of 42. Nevertheless, the baking trade is always overwhelmed with applicants. The sources of the supply of these labour-powers to London are Scotland, the western agricultural districts of England, and Germany.

In the years 1858-60, the journeymen bakers in Ireland organised at their own expense great meetings to agitate against night and Sunday work. The public — e.g., at the Dublin meeting in May, 1860 — took their part with Irish warmth. As a result of this movement, day-labour alone was successfully established in Wexford, Kilkenny, Clonmel, Waterford, &c. "In Limerick, where the grievances of the journeymen are demonstrated to be excessive, the movement has been defeated by the opposition of the master bakers, the miller bakers being the greatest opponents. The example of Limerick led to a retrogression in Ennis and Tipperary. In Cork, where the strongest possible demonstration of feeling took place, the masters, by exercising their power of turning the men out of employment, have defeated the movement. In Dublin, the master bakers have offered the most determined opposition to the movement, and by discountenancing as much as possible the journeymen promoting it, have succeeded in leading the men into acquiescence in Sunday work and night-work, contrary to the convictions of the men." [52]

The Committee of the English Government, which Government, in Ireland, is armed to the teeth, and generally knows how to show it, remonstrates in mild, though funereal, tones with the implacable master bakers of Dublin, Limerick, Cork, &c.: "The Committee believe that the hours of labour are limited by natural laws, which cannot be violated with impunity. That for master bakers to induce their workmen, by the fear of losing employment, to violate their religious convictions and their better feelings, to disobey the laws of the land, and to disregard public opinion (this all refers to Sunday labour), is calculated to provoke ill-feeling between workmen and masters, ... and affords an example dangerous to religion, morality, and social order.... The Committee believe that any constant work beyond 12 hours a-day encroaches on the domestic and private life of the working-man, and so leads to

disastrous moral results, interfering with each man's home, and the discharge of his family duties as a son, a brother, a husband, a father. That work beyond 12 hours has a tendency to undermine the health of the workingman, and so leads to premature old age and death, to the great injury of families of working-men, thus deprived of the care and support of the head of the family when most required." [53]

So far, we have dealt with Ireland. On the other side of the channel, in Scotland, the agricultural labourer, the ploughman, protests against his 13-14 hours' work in the most inclement climate, with 4 hours' additional work on Sunday (in this land of Sabbatarians!), [54] whilst, at the same time, three railway men are standing before a London coroner's jury — a guard, an engine-driver, a signalman. A tremendous railway accident has hurried hundreds of passengers into another world. The negligence of the employee is the cause of the misfortune. They declare with one voice before the jury that ten or twelve years before, their labour only lasted eight hours a-day. During the last five or six years it had been screwed up to 14, 18, and 20 hours, and under a specially severe pressure of holiday-makers, at times of excursion trains, it often lasted for 40 or 50 hours without a break. They were ordinary men, not Cyclops. At a certain point their labour-power failed. Torpor seized them. Their brain ceased to think, their eyes to see. The thoroughly "respectable" British jurymen answered by a verdict that sent them to the next assizes on a charge of manslaughter, and, in a gentle "rider" to their verdict, expressed the pious hope that the capitalistic magnates of the railways would, in future, be more extravagant in the purchase of a sufficient quantity of labour-power, and more "abstemious", more "self-denying," more "thrifty," in the draining of paid labour-power. [55]

From the motley crowd of labourers of all callings, ages, sexes, that press on us more busily than the souls of the slain on Ulysses, on whom — without referring to the Blue books under their arms — we see at a glance the mark of over-work, let us take two more figures whose striking contrast proves that before capital all men are alike — a milliner and a blacksmith.

In the last week of June, 1863, all the London daily papers published a paragraph with the "sensational" heading, "Death from simple over-work." It dealt with the death of the milliner, Mary Anne Walkley, 20 years of age, employed in a highly-respectable dressmaking establishment, exploited by a lady with the pleasant name of Elise. The old, often-told story, [56] was once more recounted. This girl worked, on an average, 16 1/2 hours, during the season often 30 hours, without a break, whilst her failing labour-power was revived by occasional supplies of sherry, port, or coffee. It was just now the height of the season. It was necessary to conjure up in the twinkling of an eye the gorgeous dresses for the noble ladies bidden to the ball

in honour of the newly-imported Princess of Wales. Mary Anne Walkley had worked without intermission for 26 1/2 hours, with 60 other girls, 30 in one room, that only afforded 3 of the cubic feet of air required for them. At night, they slept in pairs in one of the stifling holes into which the bedroom was divided by partitions of board. [57] And this was one of the best millinery establishments in London. Mary Anne Walkley fell ill on the Friday, died on Sunday, without, to the astonishment of Madame Elise, having previously completed the work in hand. The doctor, Mr. Keys, called too late to the death-bed, duly bore witness before the coroner's jury that "Mary Anne Walkley had died from long hours of work in an over-crowded work-room, and a too small and badly ventilated bedroom." In order to give the doctor a lesson in good manners, the coroner's jury thereupon brought in a verdict that "the deceased had died of apoplexy, but there was reason to fear that her death had been accelerated by over-work in an over-crowded workroom, &c." "Our white slaves," cried the *Morning Star*, the organ of the Free-traders, Cobden and Bright, "our white slaves, who are toiled into the grave, for the most part silently pine and die." [58]

"It is not in dressmakers' rooms that working to death is the order of the day, but in a thousand other places; in every place I had almost said, where 'a thriving business' has to be done.... We will take the blacksmith as a type. If the poets were true, there is no man so hearty, so merry, as the blacksmith; he rises early and strikes his sparks before the sun; he eats and drinks and sleeps as no other man. Working in moderation, he is, in fact, in one of the best of human positions, physically speaking. But we follow him into the city or town, and we see the stress of work on that strong man, and what then is his position in the death-rate of his country. In Marylebone, blacksmiths die at the rate of 31 per thousand per annum, or 11 above the mean of the male adults of the country in its entirety. The occupation, instinctive almost as a portion of human art, unobjectionable as a branch of human industry, is made by mere excess of work, the destroyer of the man. He can strike so many blows per day, walk so many steps, breathe so many breaths, produce so much work, and live an average, say of fifty years; he is made to strike so many more blows, to walk so many more steps, to breathe so many more breaths per day, and to increase altogether a fourth of his life. He meets the effort; the result is, that producing for a limited time a fourth more work, he dies at 37 for 50." [59]

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## SECTION 4

### DAY AND NIGHT WORK. THE RELAY SYSTEM.

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Constant capital, the means of production, considered from the standpoint of the creation of surplus-value, only exist to absorb labour, and with every drop of labour a proportional quantity of surplus-labour. While they fail to do this, their mere existence causes a relative loss to the capitalist, for they represent during the time they lie fallow, a useless advance of capital. And this loss becomes positive and absolute as soon as the intermission of their employment necessitates additional outlay at the recommencement of work. The prolongation of the working-day beyond the limits of the natural day, into the night, only acts as a palliative. It quenches only in a slight degree the vampire thirst for the living blood of labour. To appropriate labour during all the 24 hours of the day is, therefore, the inherent tendency of capitalist production. But as it is physically impossible to exploit the same individual labour-power constantly during the night as well as the day, to overcome this physical hindrance, an alternation becomes necessary between the workpeople whose powers are exhausted by day, and those who are used up by night. This alternation may be effected in various ways; e.g., it may be so arranged that part of the workers are one week employed on day-work, the next week on night-work. It is well known that this relay system, this alternation of two sets of workers, held full sway in the full-blooded youth-time of the English cotton manufacture, and that at the present time it still flourishes, among others, in the cotton spinning of the Moscow district. This 24 hours' process of production exists to-day as a system in many of the branches of industry of Great Britain that are still "free," in the blast-furnaces, forges, plate-rolling mills, and other metallurgical establishments in England, Wales, and Scotland. The working-time here includes, besides the 24 hours of the 6 working-days, a great part also of the 24 hours of Sunday. The workers consist of men and women, adults and children of both sexes. The ages of the children and young persons run through all intermediate grades, from 8 (in some cases from 6) to 18. [60]

In some branches of industry, the girls and women work through the night together with the males. [61]

Placing on one side the generally injurious influence of night-labour, [62] the duration of the process of production, unbroken during the 24 hours, offers very welcome opportunities of exceeding the limits of the normal working-day, e.g., in the branches of industry already mentioned, which are of an exceedingly fatiguing nature; the official working-day means for each worker usually 12 hours by night or

day. But the over-work beyond this amount is in many cases, to use the words of the English official report, "truly fearful." [63]

"It is impossible," the report continues, "for any mind to realise the amount of work described in the following passages as being performed by boys of from 9 to 12 years of age ... without coming irresistibly to the conclusion that such abuses of the power of parents and of employers can no longer be allowed to exist." [64]

"The practice of boys working at all by day and night turns either in the usual course of things, or at pressing times, seems inevitably to open the door to their not unfrequently working unduly long hours. These hours are, indeed, in some cases, not only cruelly but even incredibly long for children. Amongst a number of boys it will, of course, not unfrequently happen that one or more are from some cause absent. When this happens, their place is made up by one or more boys, who work in the other turn. That this is a well understood system is plain ... from the answer of the manager of some large rolling-mills, who, when I asked him how the place of the boys absent from their turn was made up, 'I daresay, sir, you know that as well as I do,' and admitted the fact." [65]

"At a rolling-mill where the proper hours were from 6 a.m. to 5 1/2 p.m., a boy worked about four nights every week till 8 1/2 p.m. at least ... and this for six months. Another, at 9 years old, sometimes made three 12-hour shifts running, and, when 10, has made two days and two nights running." A third, "now 10 ... worked from 6 a.m. till 12 p.m. three nights, and till 9 p.m. the other nights." "Another, now 13, ... worked from 6 p.m. till 12 noon next day, for a week together, and sometimes for three shifts together, e.g., from Monday morning till Tuesday night." "Another, now 12, has worked in an iron foundry at Stavely from 6 a.m. till 12 p.m. for a fortnight on end; could not do it any more." "George Allinsworth, age 9, came here as cellar-boy last Friday; next morning we had to begin at 3, so I stopped here all night. Live five miles off. Slept on the floor of the furnace, over head, with an apron under me, and a bit of a jacket over me. The two other days I have been here at 6 a.m. Aye! it is hot in here. Before I came here I was nearly a year at the same work at some works in the country. Began there, too, at 3 on Saturday morning — always did, but was very gain [near] home, and could sleep at home. Other days I began at 6 in the morning, and gi'en over at 6 or 7 in the evening," &c. [66]

Let us now hear how capital itself regards this 24 hours' system. The extreme forms of the system, its abuse in the "cruel and incredible" extension of the working-day are naturally passed over in silence. Capital only speaks of the system in its "normal" form.

Messrs. Naylor & Vickers, steel manufacturers, who employ between 600 and 700 persons, among whom only 10 per cent are under 18, and of those, only 20 boys under 18 work in night sets, thus express themselves: "The boys do not suffer from the heat. The temperature is probably from 86° to 90°.... At the forges and in the rollingmills the hands work night and day, in relays, but all the other parts of the work are day-work, *i.e.*, from 6 a.m. to 6 p.m. In the forge the hours are from 12 to 12. Some of the hands always work in the night, without any alternation of day and night work.... We do not find any difference in the health of those who work regularly by night and those who work by day, and probably people can sleep better if they have the same period of rest than if it is changed.... About 20 of the boys under the age of 18 work in the night sets.... We could not well do without lads under 18 working by night. The objection would be the increase in the cost of production.... Skilled hands and the heads in every department are difficult to get, but of lads we could get any number.... But from the small proportion of boys that we employ, the subject (*i.e.*, of restrictions on night-work) is of little importance or interest to us." [67]

Mr. J. Ellis, one of the firm of Messrs. John Brown & Co., steel and iron works, employing about 3,000 men and boys, part of whose operations, namely, iron and heavier steel work, goes on night and day by relays, states "that in the heavier steel work one or two boys are employed to a score or two men." Their concern employs upwards of 500 boys under 18, of whom about 1/3 or 170 are under the age of 13. With reference to the proposed alteration of the law, Mr. Ellis says: "I do not think it would be very objectionable to require that no person under the age of 18 should work more than 12 hours in the 24. But we do not think that any line could be drawn over the age of 12, at which boys could be dispensed with for night-work. But we would sooner be prevented from employing boys under the age of 13, or even so high as 14, at all, than not be allowed to employ boys that we do have at night. Those boys who work in the day sets must take their turn in the night sets also. because the men could not work in the night sets only; it would ruin their health.... We think, however, that night-work in alternate weeks is no harm. (Messrs. Naylor & Vickers, on the other hand, in conformity with the interest of their business, considered that periodically changed night-labour might possibly do more harm than continual night-labour.) We find the men who do it, as well as the others who do other work only by day.... Our objections to not allowing boys under 18 to work at night, would be on account of the increase of expense, but this is the only reason. (What cynical naïveté!) We think that the increase would be more than the trade, with due regard to its being successfully carried out, could fairly bear. (What mealy-mouthed phraseology!) labour is scarce here, and might fall short if there were such a regulation." (*i.e.*, Ellis Brown & Co. might fall into the fatal perplexity of being obliged to pay labour-power its full value.) [68]

The "Cyclops Steel and Iron Works," of Messrs. Cammell & Co., are concocted on the same large scale as those of the above-mentioned John Brown & Co. The managing director had handed in his evidence to the Government Commissioner, Mr. White, in writing. Later he found it convenient to suppress the MS. when it had been returned to him for revision. Mr. White, however, has a good memory. He remembered quite clearly that for the Messrs. Cyclops the forbidding of the night-labour of children and young persons "would be impossible, it would be tantamount to stopping their works," and yet their business employs little more than 6% of boys under 18, and less than 1% under 13. [69]

On the same subject Mr. E. F. Sanderson, of the firm of Sanderson, Bros., & Co., steel rolling-mills and forges, Attercliffe, says: "Great difficulty would be caused by preventing boys under 18 from working at night. The chief would be the increase of cost from employing men instead of boys. I cannot say what this would be, but probably it would not be enough to enable the manufacturers to raise the price of steel, and consequently it would fall on them, as of course the men (what queer-headed folk!) would refuse to pay it." Mr. Sanderson does not know how much he pays the children, but "perhaps the younger boys get from 4s. to 5s. a week.... The boys' work is of a kind for which the strength of the boys is generally ('generally,' of course not always) quite sufficient, and consequently there would be no gain in the greater strength of the men to counterbalance the loss, or it would be only in the few cases in which the metal is heavy. The men would not like so well not to have boys under them, as men would be less obedient. Besides, boys must begin young to learn the trade. Leaving day-work alone open to boys would not answer this purpose." And why not? Why could not boys learn their handicraft in the day-time? Your reason? "Owing to the men working days and nights in alternate weeks, the men would be separated half the time from their boys, and would lose half the profit which they make from them. The training which they give to an apprentice is considered as part of the return for the boys' labour, and thus enables the man to get it at a cheaper rate. Each man would want half of this profit." In other words, Messrs. Sanderson would have to pay part of the wages of the adult men out of their own pockets instead of by the night-work of the boys. Messrs. Sanderson's profit would thus fall to some extent, and this is the good Sandersonian reason why boys cannot learn their handicraft in the day. [70] In addition to this, it would throw night-labour on those who worked instead of the boys, which they would not be able to stand. The difficulties in fact would be so great that they would very likely lead to the giving up of night-work altogether, and "as far as the work itself is concerned," says E. F. Sanderson, "this would suit as well, but — " But Messrs. Sanderson have something else to make besides steel. Steel-making is simply a pretext for surplus-value making. The smelting furnaces, rolling-mills, &c., the buildings, machinery, iron, coal, &c., have something more to do than transform themselves into steel. They are there to absorb surplus-labour, and naturally absorb

more in 24 hours than in 12. In fact they give, by grace of God and law, the Sandersons a cheque on the working-time of a certain number of hands for all the 24 hours of the day, and they lose their character as capital, are therefore a pure loss for the Sandersons, as soon as their function of absorbing labour is interrupted. "But then there would be the loss from so much expensive machinery, lying idle half the time, and to get through the amount of work which we are able to do on the present system, we should have to double our premises and plant, which would double the outlay." But why should these Sandersons pretend to a privilege not enjoyed by the other capitalists who only work during the day, and whose buildings, machinery, raw material, therefore lie "idle" during the night? E. F. Sanderson answers in the name of all the Sandersons: "It is true that there is this loss from machinery lying idle in those manufactories in which work only goes on by day. But the use of furnaces would involve a further loss in our case. If they were kept up there would be a waste of fuel (instead of, as now, a waste of the living substance of the workers), and if they were not, there would be loss of time in laying the fires and getting the heat up (whilst the loss of sleeping time, even to children of 8 is a gain of working-time for the Sanderson tribe), and the furnaces themselves would suffer from the changes of temperature." (Whilst those same furnaces suffer nothing from the day and night change of labour.) [71]

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